UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,077	07/31/2003	Gerard Chauvel	TI-35638	2220

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EXAMINER
TO, JENNIFER N

ART UNIT	PAPER NUMBER
2195	

NOTIFICATION DATE	DELIVERY MODE
04/25/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/04/2008*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-26 are pending for examination.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1-2, 13-14, and 20-21 are rejected under 35 U.S.C. 102(b) as

being anticipated by Woolsey et al. (hereafter Woolsey) (U.S. Patent No.

6029000).

4.   Woolsey was cited in the previous office action.

5.   As per claim 1, Woolsey teaches the invention as claim including a system

comprising:

      a first processor (fig. 3, host processor 12);

      a second processor (fig. 3, DSP 16) coupled to the first processor (figs. 3,

5; col. 2, lines 34-38);

      single operating system configured to executed exclusively on the first

processor (fig. 2, host RTOS 56 is single operating system configured to execute

on host process 12; col. 3, lines 36-40); and

middle layer software configured to execute on the first processor and

configured to distributed tasks to run on either or both processors (fig. 5; col. 3,

lines 24-26; col. 4, lines 34-66; col. 19, lines 47-59).

6.   As per claim 2, Woolsey teaches that wherein the middle layer software

comprises a Java virtual machine (fig. 5, item 44).

7.   As per claims 13-14, and 20-21, they are rejected for the same reason as

claims 1-2 above.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

9.   Claims 3-5, 15, and 22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Woolsey et al. (hereafter Woolsey) (U.S. Patent No. 6029000),

as applied in claim 1 above, and in view of Bolan et al. (hereafter Bolan) (U.S.

Patent No. 5210828).

10.   Woolsey and Bolan were cited in the previous office action.

11.   As per claim 3, Woolsey teaches the invention substantially as claimed in

claim 1. Woolsey did not specifically teach a synchronization unit coupled to the

first and second processors, said synchronization unit configured to synchronize

the execution of the first and second processors.

12.   However, Bolan teaches a synchronization unit coupled to the first and

second processors, said synchronization unit configured to synchronize the

execution of the first and second processors (fig. 1, item 50, the synchronization

is done using the inter-processor communications facility).

13.   It would have been obvious to one of an ordinary skill in the art at the time

the invention was made to have combined the teaching of Woolsey and Bolan

because Bolna teaching of a synchronization unit configured to synchronize the

execution of the first and second processors would improved the integrity of

Woolsey's system by enabling the processors to communicate in a fast and

efficient manner (Bolan, abstract, lines 8-9).

14.   As per claim 4, Bolan teaches that the synchronization unit is configured

to cause the first processor to transition to a wait mode while the second

processor executes a task (col. 8, lines 64-88).

15.   As per claim 5, Bolan teaches that wherein the first processor is

configured to transition from the wait mode to a fully operational mode by a signal

assert by the either the first or second processor to the synchronization unit (col.

8, lines 64-68; col. 9, lines 30-40).

16.   As per claims 15, 22, they are rejected for the same reason as claim 3

above.

17.   Claims 6-12, 16-19, and 23-26 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Woolsey et al. (hereafter Woolsey) (U.S. Patent No.

6029000), as applied in claim 1 above, and in view of Chauvel et al. (hereafter

Chauvel) (U.S. Publication No. 2002/00624427).

18.   Woolsey and Chauvel were cited in IDS filed 09/25/2007.

19.   As per claim 6, Woolsey teaches the invention substantially as claimed in

claim 1. Woolsey did not specifically teach a shared TLB configured to contain a

plurality of entries in which virtual-to-physical address translations are stored,

each entry also comprising a task ID field in which a task ID associated with the

corresponding translation and with a task running on the first ore second

processor is stored.

20.   However, Chauvel teaches a shared TLB configured to contain a plurality

of entries in which virtual-to-physical address translations are stored, each entry

also comprising a task ID field in which a task ID associated with the

corresponding translation and with a task running on the first ore second

processor is stored (paragraphs [0036], [0056]).

21.   It would have been obvious to one of an ordinary skill in the art at the time

the invention was made to have combined the teaching of Woolsey and Chauvel

because Chauvel teaching of a shared TLB configured to contain a plurality of

entries in which virtual-to-physical address translations are stored, each entry

also comprising a task ID field in which a task ID associated with the

corresponding translation and with a task running on the first ore second

processor is stored would improved the integrity of Woolsey's system by

managing task processing that takes into account task processing times,

resource capabilities and capacity, and other task processing need (Chauvel,

paragraph [0010]).

22.   As per claim 7, Chauvel teaches that wherein the operating system is

configured to selectively flush at least one of the entries in the shared TLB based

on task ID (paragraphs [0040]-[0042]).

23.   As per claim 8, Chauvel teaches that wherein the middle layer software is

configured to selectively flush at least one of the entries in the shared TLB based

on task ID (paragraphs [0040]-[0042]).

24.   As per claim 9, Woolsey teaches that wherein the middle layer software

comprises a Java virtual machine (fig. 5, item 44).

25.   As per claim 10, Chauvel teaches that wherein at least one of the shared

TLB entries are invalided, and those entries that are invalided have task Ids that

are associated with tasks that are running or have run on only one of the first or

second processors (paragraph [0056]).

26.   As per claim 11, Chauvel teaches that wherein the second processor has

programmable context and is configured to autonomously switch its own context

without support from the operating system executing on the first processor

(paragraphs [0044]-[0045]).

27.   As per claim 12, Chauvel teaches wherein the second processor includes

a programmable task ID register which is configured to contain a value indicative

of the task currently running on the second processor that is written by the middle

layer software running on the first processor (paragraphs [0048]-[0049]).

28.   As per claims 16-19, and 23-26, they are rejected for the same reason as

claims 6, and 10-12 above.

Response to Arguments

29.   Applicant's arguments filed 02/08/2008 have been fully considered but

they are not persuasive.

30.   In the remark, applicant argued that Woolsey fails to teach single

operating system configured to execute exclusively on the first processor.

31.   Examiner respectful disagreed with applicant. Woolsey clearly teaches

single operating system configured to executed exclusively on the first processor

(fig. 2, host RTOS 56 is single operating system configured to execute on host

process 12; col. 3, lines 36-40). Although, Woolsey teaches that each processor

(first and second processor) utilized their own operating system, but it does not

change the fact that Woolsey still teaches that single operating system

configured to executed exclusively on the first processor because the recited

limitation does not shown the relationship between the first and second

processor with respect to the single operating system (i.e. the recited limitation

does not prevent the second processor from having its own operating system).

Thus, Woolsey clearly teaches the recited limiation.

Conclusion

32.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure (see attached PTO 892 form for details).

33.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

34.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Jennifer N. To whose telephone number is

(571) 272-7212. The examiner can normally be reached on M-T 6AM- 3:30 PM,

F 6AM- 2:30 PM.

35.   If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

36.   Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/   Jennifer N. To
Supervisory Patent Examiner, Art Unit 2195   Examiner
                                                            Art Unit 2195